

REMARKS/ARGUMENTS

In the specification, Applicant amended the specification to correct all possible minor errors, and the amendment does not introduce any new matter.

Claims 1 has been amended. Claim 2-6 has been deleted because of the limitation is added into Claim 1. Claims 21-25 are divided due to the restriction. Thus, the new added Claims number is set from Claim 26 to Claim 29.

Applicant has thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the references cited therein. The following remarks are believed to be fully responsive to the Office Action and, when coupled with the above amendments, are believed to render all claims at issue patentably distinguishable over the cited references.

SPECIFICATION OBJECTION

With respect to Page 2 of the Office Action, the Examiner objected the specification.

Examiner objected the specification that has been checked to extent necessary to determine the presence of all possible minor errors.

Applicant amended the all possible error in the specification. Thus, the objection of the specification can be traversed.

CLAIMS OBJECTION

With respect to Page 5 of the Office Action, the Examiner objected the claim 10.

Because of the Examiner is suggested that the limitation of above Claim 10 is re-written into independent claim, then, it would be allowable. Thus, Applicant added new Claim 26 to Claim 29 that including all of the limitations of the base claim and any intervening claims. Therefore, the objection of Claim 10 can be withdrawn.

CLAIM REJECTION-35 U.S.C SECTION 102(e)

Claims 1-9 and 11-15 stand rejected under 35 U.S.C. 102(e) as being anticipated by Chiyo et al (6,593,016B1).

This rejection is respectfully traversed on the basis that Chiyo et al '016 does not disclose that the "performing a surface reconstruction process to said crystalline silicon (111) substrate after said surface reconstruction process" as in Claim 1.

The substrate and production method are different between Chiyo et al. '016 and the present invention. In the disclosure of Chiyo et al. '016, the specifications for forming buffer layers are for the sapphire substrate (as described in Abstract and main Drawings, Fig. 5 and Fig. 8, also described in col. 6 lines 30-45, col. 12 lines 52, col. 13 lines 11-31, and col. 18, and lines 29-46). In particular, Chiyo et al. '016 did not disclose the substrate with specific crystal orientation and material such as the crystalline silicon (111) substrate as in Claim 1. the production method for forming a silicon nitride layer cited by Chiyo et al. '016 (col. 7, line 66 to col. 8, line 10, and col. 7, lines 20-38) is a known method of thermal nitridation for metal-organic chemical vapor deposition (MOCVD) and can only lead to an amorphous or polycrystalline silicon nitride phase. In contrast, the present invention discloses a detailed production method "nitrogen RF-plasma nitridation and molecular-beam epitaxy (MBE)" substrate utilizing the magic matching ratios between the lattice constants of comprising material "1:2 for Si₃N₄ (0001)/Si (111) and 5:2 for

AlN(0001)/Si₃N₄(0001)". As a result, the double buffer layers disclosed in the present invention comprises two distinct layers with sharp material transitions and epitaxial alignments between the bottom layer and the crystalline silicon substrate. Thus, according to above discussion, Applicant believed that Chiyo et al '016 cannot anticipate the present invention. Thus, the rejection of above claims can be traversed.

Conclusion

In the light of the above amendments and remarks, Applicant respectfully submits that all pending Claims 1 and 7-29 as currently presented are in condition for allowance. Applicant has thoroughly reviewed that art cited but relied upon by the Examiner. Applicant has concluded that these references do not affect the patentability of these claims as currently presented. Accordingly, reconsideration is respectfully requested.

This Amendment was prepared by Applicant, and is being submitted without substantive change by the undersigned Attorney.

Respectfully submitted,



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